Claims

1. Non-competitive immunoassay for a small analyte comprising reacting a sample containing said analyte with a reagent pair comprising a first binding partner that binds to said analyte, and a second binding partner that binds to the complex of said analyte and said first binding partner, wherein said second binding partner is obtained from a display recombinant binding partner library by selecting a binding partner that binds to said complex of the analyte and first binding partner, and determining the binding of the second binding partner, thus indicating the presence of the analyte in the sample.

2. The assay of claim 1, wherein the first and second binding partners are selected from antibody fragments Fab and scFv.

3. The assay of claim 1 or 2, which assay is a homogeneous assay.

4. The assay of claim 3, which assay is based on fluorescence resonance energy transfer (FRET).

5. The assay of any of the preceding claims, wherein the analyte is a drug of abuse.

6. The assay of claim 5, wherein the analyte is morphine, tetrahydrocannabinol (THC) or amphetamine.

7. Reagent pair for a non-competitive immunoassay for a small analyte, comprising a first binding partner that binds to said analyte, and a second binding partner that binds to the complex of said analyte and said first binding partner, wherein said second binding partner is obtained from a display recombinant binding partner library by selecting a binding partner that binds to said complex of the analyte and first binding partner.

8. Test kit for a non-competitive immunoassay for a small analyte, said kit comprising a reagent pair comprising a first binding partner that binds to said analyte, and a second binding partner that binds to the complex of said analyte and said first binding partner, wherein said second binding partner is obtained from a display recombinant binding partner library by selecting a binding partner that binds to said complex of the analyte and first binding partner.

9. The test kit of claim 8, wherein the first and second binding partners are selected from antibody fragments Fab and scFv.

10. The test kit of claim 8 or 9, comprising reagents for a homogeneous assay.

11. The test kit of claim 10, comprising reagents for a fluorescence resonance energy transfer (FRET) based assay.

12. The test kit of any of claims 8 to 11, comprising reagents for assaying a drug of abuse.

13. The test kit of claim 12, comprising multiple reagent pairs for assaying multiple drugs of abuse.

14. The test kit of any of claims 8 to 13, comprising reagents for assaying morphine, tetrahydrocannabinol (THC) or amphetamine.

15. The test kit of claim 14, comprising one or more reagents from the group consisting of the ligand-binding portion of M1 Fab comprising SEQ ID NO 1 and SEQ ID NO 2; M2 Fab comprising SEQ ID NO 3 and SEQ ID NO 4; and K11 scFv comprising SEQ ID NO 5.

16. The test kit of claim 15, wherein said ligand binding portion is formed by amino acids no. 3 to 108 of SEQ ID NO 1 and amino acids no. 4 to 123 of SEQ ID NO 2; or of amino acids no. 3 to 108 of SEQ ID NO 3 and of amino acids no. 4 to 123 of SEQ ID NO 4; or of amino acids no. 3 to 120 and no. 140 to 246 of SEQ ID NO 5.

17. Use of a reagent pair comprising a first binding partner that binds to an analyte, and a second binding partner that binds to the complex of said analyte and said first binding partner, in a non-competitive immunoassay for a small analyte, whereby the second binding partner is obtained from a display recombinant binding partner library by selecting a binding partner that binds to said complex of the analyte and first binding partner.

18. Process for preparing a reagent pair for a non-competitive immunoassay for a small analyte, comprising providing a first binding partner that binds to said analyte, and a second binding partner that binds to the complex of said analyte and said first binding partner, wherein said second binding partner is obtained from a display recombinant binding partner library by selecting a binding partner that binds to said complex of the analyte and first binding partner.

19. The process of claim 18, wherein recombinant antibody fragments are prepared from a phage display library.

20. The process of claim 18 or 19, wherein the first binding partner is also obtained from a display recombinant binding partner library.

21. Recombinant binding protein, comprising the ligand-binding portion of M1 Fab comprising SEQ ID NO 1 and SEQ ID NO 2; M2 Fab comprising SEQ ID NO 3 and SEQ ID NO 4; or K11 scFv comprising SEQ ID NO 5.

22. The recombinant binding protein of claim 21, wherein said ligand binding portion of said protein is formed by amino acids no. 3 to 108 of SEQ ID NO 1 and amino acids no. 4 to 123 of SEQ ID NO 2; or of amino acids no. 3 to 108 of SEQ ID NO 3 and of amino acids no. 4 to 123 of SEQ ID NO 4; or of amino acids no. 3 to 120 and no. 140 to 246 of SEQ ID NO 5.

23. The recombinant binding protein of claim 21, which protein has the amino acid sequence SEQ ID NO 1 and SEQ ID NO 2; SEQ ID NO 3 and SEQ ID NO 4; or SEQ ID NO 5.

24. DNA, which encodes a recombinant binding protein of claim 21, 22 or 23.

25. Host cell, which expresses a recombinant binding protein of claim 21, 22 or 23.